

MEMORANDUM

TO: Docket

FROM: EPA, Clean Air Markets Division

SUBJECT: Monitoring and Reporting Costs with the Proposed Interstate Air Quality Rule

DATE: January 28, 2004

EPA plans to do a more complete analysis of the monitoring and reporting costs associated with the IAQR as part of a Supplemental Notice of Proposed Rulemaking. Because the most significant portion of those costs are related to emissions monitoring and reporting, we are summarizing a preliminary estimate of costs in this memo.¹

To gather relevant information on monitoring costs and the possible impacts associated with using Part 75 for purposes of the model trading rule, relevant data were collected from existing reports, consultants directly involved in CEMs cost analysis, equipment vendors and affected sources under other programs that use the monitoring methodologies of interest.

The costs associated with monitoring under the model trading rule are dependent upon both the existing programs that a unit is subject to and on the type of unit (e.g coal, base-load gas, peaking gas). Units already subject to both the Acid Rain Program and the NOx SIP Call are already monitoring and reporting both SO₂ and NOx mass information to EPA so they will not incur any additional costs. Units that are not subject to either of these programs will have to install new equipment and report new data to EPA so they will incur costs. The different categories of units and the changes they would need to make and the capital costs associated with those changes on a unit basis are summarized in Table 1.

¹There are likely to be small additional costs associated with activities such as allowance transfers and end of year compliance forms.

Table 1 Various Categories of Units and the Necessary Monitoring Changes and Capital Costs Associated of those Changes with the IAQR on a Unit Basis					
		New Requirements	Capital Cost	Number of Units	Total Cost
Units in the NO_x SIP Call Region	All units subject to Title IV	None	None	1,191	None
	Coal-fired units not subject to Title IV	Monitoring and reporting of mass emissions data for SO ₂ using CEMS	\$49,000	57	\$2.8 million
	Gas and oil-fired units not subject to Title IV	Monitoring and reporting of mass emissions data for SO ₂ using fuel flow metering	\$4,000	183	\$0.7 million
Units Outside the NO_x SIP Call Region	Units Subject to Title IV	Update software to report NO _x mass	Up to \$6,300 depending upon unit type	999	\$6.3 million
	Coal-fired units not subject to Title IV	Monitor and report SO ₂ and NO _x mass using CEMS	\$163,000	10	\$1.6 million
	Baseload gas and oil-fired units not subject to Title IV	Monitor NO _x mass using CEMs and SO ₂ using fuel flow metering	\$127,000	140	\$17.8 million
	Peaking gas and oil-fired units not subject to Title IV	Monitor NO _x mass using Appendix E to Part 75 and SO ₂ using fuel flow metering	\$21,000	366	\$7.7 million
	Total			2,946	\$36.9 million

Annual operating and maintenance costs range from zero for Acid Rain units that are already subject to the NO_x SIP Call, to up to \$39,000 per year for coal-fired units not currently subject to either Title IV or the NO_x SIP Call. First year operating costs may be slightly higher due to costs to train staff.

References

1. EPA's OAQPS CEM Cost model, (CEMCOST 02/10/98) available at <http://www.epa.gov/ttnemc01/cem.html>
2. Compilation Of Monitoring Cost Information For Part 75 And Model NOx Trading Rule Implementation - Perrin Quarles Associates, Inc. -January 1999.
3. Status Of Mercury Emissions Monitoring –Draft Paper- Dr. Ruben Deza and Travis Johnson- July 2003 – US EPA, Clean Air Markets Division
4. Cost Analysis Of Mercury Monitoring Techniques-Draft Report- ARCADIS - JULY 2003
5. Continuous Emission Monitoring Experience in the Natural Gas Transmission Industry- Russell S. Berry- RMB Consulting & Research, Inc. -1999
6. Options for Reduced CEMS QA/QC Costs- Russell S. Berry- RMB Consulting & Research, Inc. –1997
7. Baines, G., Haynes, R., and Stabell, J., “Predicting Boiler Emissions with Neural Networks”, TAPPI JOURNAL, 80(5), pp. 57-61(1998).
8. Implementing SO₂ Allowance Trading: Implications of Transaction Costs and Taxes- Larry B. Parker, Specialist Environment and Natural Resources Policy Division, Donald W. Kiefer, Chief, Economics Division –CRS report for Congress- 1998
9. Payback Time for CEMS – J. C. Smith – ICAC- 1999
10. Performance Review of NOx/O₂ Continuous Emission Monitors –Battelle-2002
11. Discussions with technical experts from the following companies: ARCADIS G&M Inc., The CADMUS Group Inc., Genesis, Praxair, Powergen, MRI, Monitor Labs, Inc., PS Analytical, Airgas, Opsi, Control Analytics, and Land Instruments.
12. Information was also obtained from the following websites:
The CEMI 203 Compact CEMS - <http://cemi.us/prod01.htm>
Ametek Continuous Emission Monitors <http://www.ametekpi.com/continuousemissions.html>
Tyco Environmental Systems-
http://www.cleanairsystems.com/home/solutions/emission_monitoring/goyen_continuous_emission_monitors
Horiba - www.envirohii.horiba.com
Land Instruments – www.landinst.com